

## **Carlsbad Highlands Ecological Reserve**

The Carlsbad Highlands Ecological Reserve is a 297-acre property located in the City of Carlsbad, northwestern San Diego County. This reserve is located along the eastern boundary of the City, abutting the City of Oceanside. Cannon Road dead-ends on the property's eastern boundary. The property is part of a larger open space preserve composed of open space lands owned by the City of Carlsbad surrounding Lake Calavera, and mitigation parcels owned and managed by The Environmental Trust. The initial lands dedicated as the Carlsbad Highlands ER were set aside in 1996 as a part of the Carlsbad Highlands Conservation Bank, owned by Bank of America. Since that time additional lands have been or are in the process of being purchased or given (e.g. Caltrans) to the Department to expand the ER. This ER has a history of agricultural use, although the agricultural fields on the eastern portion of the property have been fallow for many years, and now support annual grassland habitat. Off-highway vehicle (OHV) use is another long-time destructive use of the property, which the SCR is attempting to control and eventually exclude. The majority of the rest of the property is dominated by coastal sage scrub vegetation, with a smaller amount of oak riparian habitat also being present. The larger open space area incorporating the Carlsbad Highlands ER is surrounded by residential development, with the exception of several narrow habitat corridors to the north and west. The Carlsbad Highlands ER is considered a key open space component of the City of Carlsbad's Habitat Management Plan (HMP), which is part of north San Diego County's Multiple Habitat Conservation Program.



**Figure 14.** Carlsbad Highlands Ecological Reserve

## Resource Inventory

Along with its general values for coastal sage scrub, annual grassland, and riparian habitats, this reserve also supports two listed species: the California gnatcatcher (federal threatened) and the thread-leaved brodiaea (*Brodiaea filifolia*, state endangered and federal threatened). Along with annual general wildlife surveys, these two species are specifically monitored every year on the ER.

Table 9 lists the wildlife species observed on-site during the 2002 spring monitoring period. A minimum of four gnatcatcher territories were determined to be active on the property based upon the observation of paired birds or calling males. It should be noted that the 94-acre portion of the ER known as the Holly Springs parcel was not added to the ER until after the monitoring season had concluded in 2002. Additional gnatcatchers may be present on this new parcel, and surveys during 2003 will be conducted to assess the presence of this species, as well as thread-leaved brodiaea. Other sensitive species of note observed in 2002 were the northern harrier (pair observed foraging over the ER with possible nesting activity off-site to the west along the creek), Cooper's hawk (possible breeding pair in riparian oak woodland), osprey, loggerhead shrike, and grasshopper sparrow.

A small thread-leaved brodiaea population occurs on a clay soil area on the northern portion of the ER. This site has a history of OHV use, and is currently dominated by annual grassland, although remnants of native grassland are also present. During the spring of 2002, surveys of the brodiaea site were conducted to assess the amount of vegetative growth occurring. Using one meter square plots distributed along a 12 meter transect through the population, an attempt was made to count the number of individual plants present. The goal was to relate the number of bulbs producing vegetative growth with the number of bulbs that actually produced flowers later in the season. This sampling method proved to be impractical because of the difficulty in assigning the vegetative growth to one or more bulbs, since bulbs are often clustered together underground. Because of the severe drought conditions in 2002, no bulbs flowered. It was also noted that as the season progressed there was severe herbivory on the vegetative portions of the brodiaea, primarily from rabbits. This also likely contributed to the lack of flowering. In past years with more normal rains, this brodiaea population has produced between 30 and 50 flowering plants. During the spring and summer of 2002, a reference population of thread-leaved brodiaea at another preserve in the City of Carlsbad (The Environmental Trust preserve adjacent to the Newton Drive Business Park) was checked at the same time that the ER population was checked. As at the ER, no brodiaea flowered at this reference site, even though it has a much higher population of this plant species.

**Table 9.** Species occurring on the Carlsbad Highlands ER – 2002

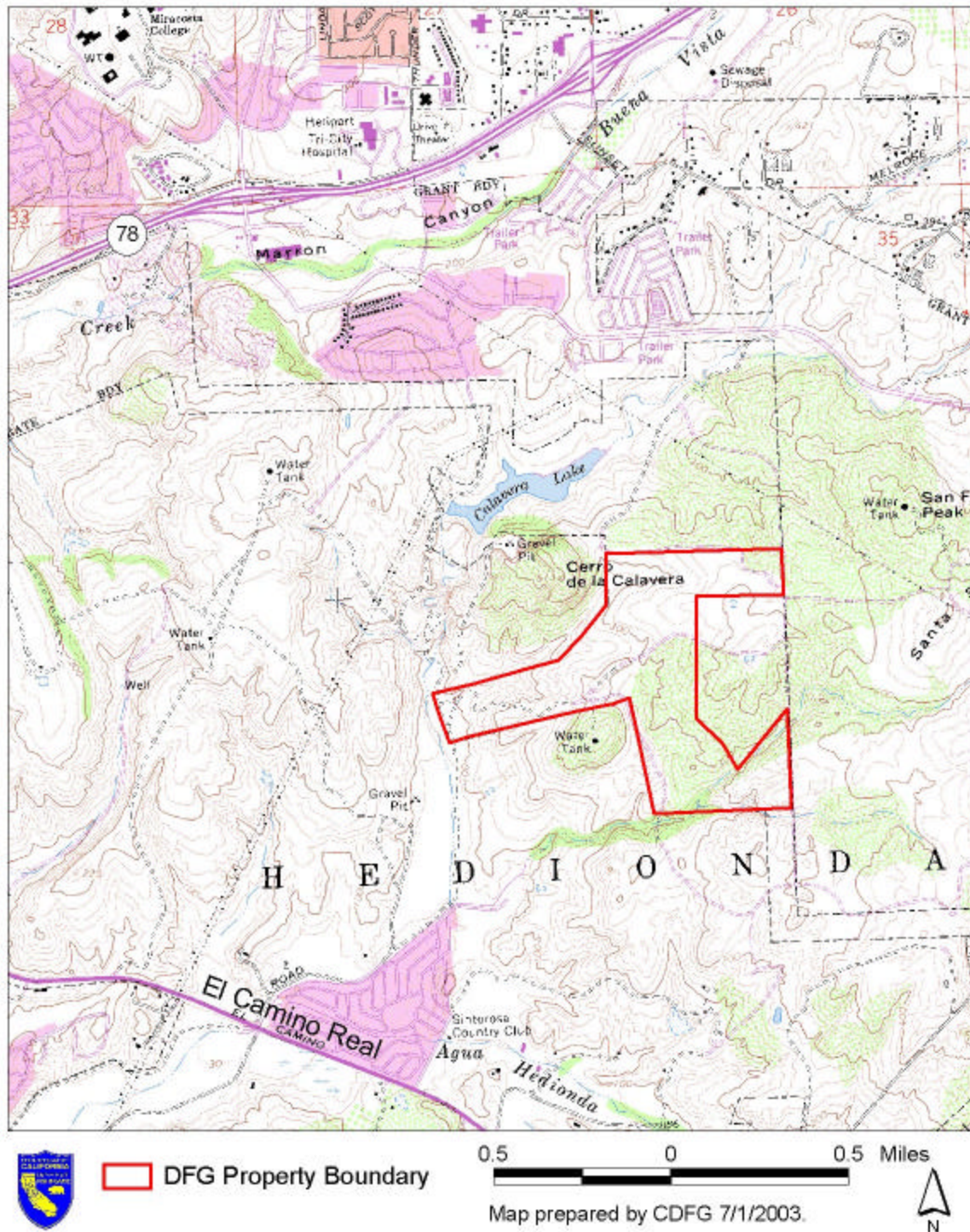
| <b>MAMMALS</b>           |                                   |               |   |
|--------------------------|-----------------------------------|---------------|---|
| <b>Common Name</b>       | <b>Scientific Name</b>            | <b>Status</b> | <b>Comments*</b>  |
| Desert Cottontail        | <i>Sylvilagus audubonii</i>       |               | 1 individual seen.  |
| Woodrat                  | <i>Neotoma</i> sp.                |               | Scat and large nest noted.  |
| Coyote                   | <i>Canis latrans</i>              |               | Scat  |
| Domestic Dog             | <i>Canis familiaris</i>           |               | Tracks and scats  |
| Bobcat                   | <i>Lynx rufus</i>                 |               | Scat  |
| <b>BIRDS</b>             |                                   |               |   |
| <b>Common Name</b>       | <b>Scientific Name</b>            | <b>Status</b> | <b>Comments*</b>  |
| Turkey Vulture           | <i>Cathartes aura</i>             |               | 1 (last detected 2000)  |
| Osprey                   | <i>Pandion haliaetus</i>          | SSC           | 1   |
| White-tailed Kite        | <i>Elanus leucurus</i>            | FP            |   |
| Northern Harrier         | <i>Circus cyaneus</i>             | SSC,<br>MSCP  | 1 pair in courtship display;<br>additional single ? .                                 |
| Cooper's Hawk            | <i>Accipiter cooperii</i>         | SSC           | 1 pair. Adult ? is paired<br>with sub-adult ? . Nest (?)<br>in oak/riparian woodland. |
| Red-tailed Hawk          | <i>Buteo jamaicensis</i>          |               | 5   |
| Red-shouldered Hawk      | <i>Buteo lineatus</i>             |               | 2   |
| California Quail         | <i>Callipepla californica</i>     |               |   |
| Mourning Dove            | <i>Zenaida macroura</i>           |               | 5   |
| White-throated Swift     | <i>Aeronautes saxatalis</i>       |               | 1   |
| Greater Roadrunner       | <i>Geococcyx californianus</i>    |               |   |
| Anna's Hummingbird       | <i>Calypte anna</i>               |               | 5   |
| Nuttall's Woodpecker     | <i>Picoides nuttallii</i>         |               | 1   |
| Northern Flicker         | <i>Colaptes auratus</i>           |               | 1   |
| Pacific-slope Flycatcher | <i>Empidonax difficilis</i>       |               | 2   |
| Black Phoebe             | <i>Sayornis nigricans</i>         |               | 1   |
| Say's Phoebe             | <i>Sayornis saya</i>              |               | 2   |
| Loggerhead Shrike        | <i>Lanius ludovicianus</i>        | SSC           | 1   |
| Hutton's Vireo           | <i>Vireo huttoni</i>              |               | 1 heard   |
| Western Scrub Jay        | <i>Aphelocoma californica</i>     |               | 5   |
| American Crow            | <i>Corvus brachyrhynchos</i>      |               |   |
| Common Raven             | <i>Corvus corax</i>               |               |   |
| Horned Lark              | <i>Eremophila alpestris</i>       |               |   |
| Tree Swallow             | <i>Tachycineta bicolor</i>        |               | 10  |
| Violet-green Swallow     | <i>Tachycineta thalassina</i>     |               | 3   |
| N. Rough-winged Swallow  | <i>Stelgidopteryx serripennis</i> |               | 1   |
| Cliff Swallow            | <i>Petrochelidon pyrrhonota</i>   |               |   |
| Bushtit                  | <i>Psaltiriparus minimus</i>      |               |   |
| Bewick's Wren            | <i>Thryomanes bewickii</i>        |               | 10  |
| House Wren               | <i>Troglodytes aedon</i>          |               |   |
| Ruby-crowned Kinglet     | <i>Regulus calendula</i>          |               | 1   |

|                                   |                                  |               |   |
|-----------------------------------|----------------------------------|---------------|---|
| Gnatcatcher                       | <i>Polioptila sp.</i>            |               | 1 prob. Blue-gray Gnatcatcher in sagebrush, sumac on edge of riparian.  |
| California Gnatcatcher            | <i>Polioptila californica</i>    | FT, SSC, MSCP | 4 pairs. Habitat in area of detection is about 80% black sage, laurel sumac, some <i>Adolfia</i> and lemonade berry with very little chamise. |
| Hermit Thrush                     | <i>Catharus guttatus</i>         |               | 2   |
| Wrentit                           | <i>Chamaea fasciata</i>          |               | 10  |
| Northern Mockingbird              | <i>Mimus polyglottos</i>         |               |   |
| California Thrasher               | <i>Toxostoma redivivum</i>       |               | 5   |
| American Pipit                    | <i>Anthus rubescens</i>          |               |   |
| Orange-crowned Warbler            | <i>Vermivora celata</i>          |               | 1   |
| Yellow-rumped Warbler             | <i>Dendroica coronata</i>        |               |   |
| Common Yellowthroat               | <i>Geothlypis trichas</i>        |               | 2   |
| Spotted Towhee                    | <i>Pipilo maculatus</i>          |               | 1   |
| California Towhee                 | <i>Pipilo crissalis</i>          |               | 10  |
| So. Calif. Rufous-crowned Sparrow | <i>Aimophila ruficeps</i>        | SSC, MSCP     |   |
| Savannah Sparrow                  | <i>Passerculus sandwichensis</i> |               |   |
| Grasshopper Sparrow               | <i>Ammodramus savannarum</i>     | SSC           | 1 ? in grassland.   |
| Fox Sparrow                       | <i>Passerella iliaca</i>         |               |   |
| Song Sparrow                      | <i>Melospiza melodia</i>         |               | 2   |
| White-crowned Sparrow             | <i>Zonotrichia leucophrys</i>    |               | 2   |
| Indigo Bunting                    | <i>Passerina cyanea</i>          |               | 1 ?   |
| Western Meadowlark                | <i>Sturnella neglecta</i>        |               | heard   |
| House Finch                       | <i>Carpodacus mexicanus</i>      |               | 2   |
| Lesser Goldfinch                  | <i>Carduelis psaltria</i>        |               | 5   |
| <b>REPTILES</b>                   |                                  |               |   |
| <b>Common Name</b>                | <b>Scientific Name</b>           | <b>Status</b> | <b>Comments*</b>  |
| Western Fence Lizard              | <i>Sceloporus occidentalis</i>   |               |   |
| <b>AMPHIBIANS</b>                 |                                  |               |   |
| <b>Common Name</b>                | <b>Scientific Name</b>           | <b>Status</b> | <b>Comments*</b>  |
| Treefrog                          | <i>Hyla sp.</i>                  |               | Calls   |
| <b>SENSITIVE PLANTS</b>           |                                  |               |   |
| <b>Common Name</b>                | <b>Scientific Name</b>           | <b>Status</b> | <b>Comments*</b>  |
| Thread-leaved Brodiaea            | <i>Brodiaea filifolia</i>        | SE,FT         | No flowering plants in 2002, although vegetative growth present.  |

\* All records from Department of Fish and Game biologists; numbers refer to maximums detected per vis it.  
Status Codes : SE-State endangered; FE-Federal endangered; FT-Federal threatened; FP-State fully protected; SSC-California Species of Special Concern; MSCP-MSCP covered species; I-Introduced.



## Carlsbad Highlands Ecological Reserve



**Figure 15.** Map of Carlsbad Highlands Ecological Reserve